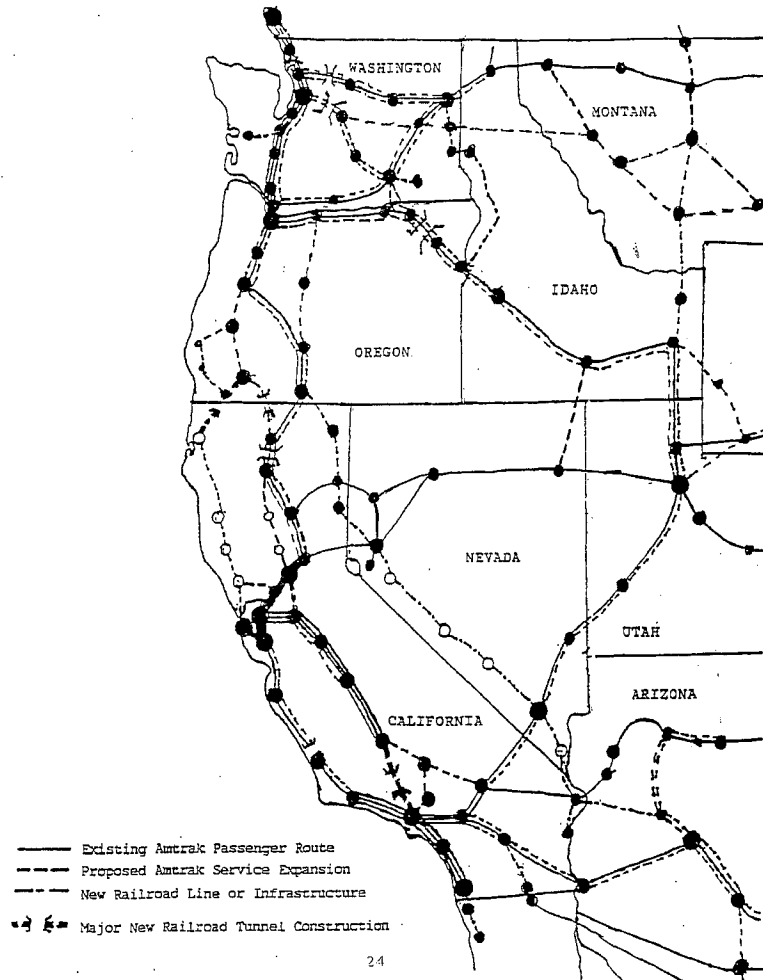
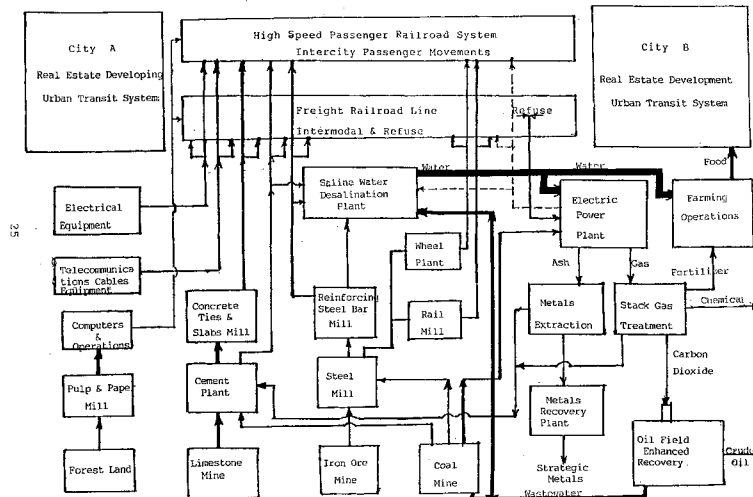


## Comment Letter PH-F031A Continued

PROPOSED ROUTE NETWORK FOR AN INTERCITY RAIL PASSENGER SYSTEM ON THE WEST COAST



PROCESS FLOW ARRANGEMENT FOR THE ECONOMIC ACTIVITY SYNERGISM FOR INDUSTRIAL DEVELOPMENT IN PROPOSED HIGH SPEED GROUND TRANSPORTATION CORRIDOR IN THE SOUTHWESTERN UNITED STATES



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**Response to Comments Hal B. H. Cooper, Jr. , Oral Presentation, Attachment A, April 28, 2004 (Letter PH-F031A)**

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**PH-F031A-1**

This is an attachment to comment PH-F013. Please see response to Comment PH-F013-1.

**Comment Letter PH-F031B****PH-F031B**

Attachment B to  
Oral Presentation  
by  
Hal B. H. Cooper, Jr.  
4/28/04  
Public Hearing

**POTENTIAL PRIVATE SECTOR FINANCING MECHANISMS**

for the

**PROPOSED TEHACHAPI MOUNTAIN RAILROAD TUNNELS**

with the

**COMBINATION FREIGHT AND PASSENGER SERVICE**

of the

**CALIFORNIA HIGH SPEED RAIL PROJECT**

and the

**FUTURE WEST COAST HIGH SPEED RAIL NETWORK**

Prepared by

Hal B. H. Cooper, Jr., Ph D, PE  
Consulting Transportation Engineer  
Cooper Consulting Company  
11715 N. E. 145<sup>th</sup> Street  
Kirkland, Washington 98034

For Presentation to the  
Public Hearing of the  
California High Speed Rail Authority  
Fresno City Council Chambers  
2600 Fresno Street  
Fresno, California

April 28, 2004

**POTENTIAL PRIVATE SECTOR FINANCING MECHANISMS**

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Fresno, California

April 28, 2004

## Comment Letter PH-F031B Continued

1

The State of California is planning to construct a new-electrified high-speed rail passenger system of approximately 700 miles in length at an estimated capital cost of \$37 billion which will be designed to carry up to 68 million passengers annually (185,000 passengers/ day). The proposed high speed rail passenger system is planned to connect all of the major metropolitan areas of the State of California together into a single route network in both Southern and Northern California with construction over a 10 to 16 year period. This proposed high speed rail passenger system serving the main urban areas of California can then be built at a much lower cost than the estimated \$82 billion which would be required to expand its existing highway and airport system with 2,970 miles of new highway lanes and 60 new airport gates to provide the same expected future traffic volumes.

The high-speed passenger trains are expected to operate at speeds of up to 220 miles per hour with transit times between Los Angeles and San Francisco of less than 2.5 hours.

Perhaps the most difficult and costly part of the entire 700 – mile high speed rail system in California is the 110 to 120 mile section between Los Angeles and Bakersfield because of the alternative routes, the mountainous terrain and the potential geologic activity in the area. There have been two alternative routes proposed for this section between Los Angeles and Bakersfield along the Interstate 5 freeway over the Grapevine Grade and through the Antelope Valley in parallel to State Highway 14 and 58. The proposed Antelope Valley route is longer by 10 to 20 mile but has a significant rider ship potential in the Palmdale and Lancaster areas, and would serve the future Palmdale International Airport as a major air traffic hub. The proposed Interstate 5 freeway route is shorter and serves 10 to 12 minutes for trip times in the main project traffic market between San Francisco and Los Angeles, but involves extensive tunneling. The difficulty is that it adds significantly to the capital cost of the project to build both routes by at least \$2.0 to 3.5 billion to serve both routes so that there would be benefits to developing alternative financing structures.

In addition, there is a significant and growing problem of rapidly increasing truck traffic for freight transport on all of California's highways. Nowhere is this problem of increasing truck traffic of greater

2

concern than along the main Interstate 5 freeway through California because of rising traffic congestion, air pollutant emissions and roadway maintenance costs. Nowhere is the problem of increasing truck traffic volumes along the Interstate 5 freeway as California's main north – south traffic artery than over the 45 – miles between Wheeler Ridge and Sylmar over the Tehachapi Mountains, and especially over the steep Grapevine Grade between Grapevine and Castaic.

In parallel, the rapidly increasing freight traffic volumes over its crowded railroad lines are creating a number of congestion bottlenecks, especially with the growing container traffic to and from the Ports of Los Angeles and Long Beach in Southern California as well as to and from the Port of Oakland in Northern California. Nowhere is this rail traffic bottleneck more severe than over the 75 mile Tehachapi Mountain line between Bakersfield and Mojave, which is an antiquated largely single-track line built in the 1870's which includes the notorious Tehachapi Loop. This Tehachapi Mountain railroad line has been basically saturated at a traffic level of 60 to 70 freight trains per day, and is badly in need of expansion to relieve is probably California's greatest single rail transportation bottleneck.

A solution is proposed herein the present paper which will allow for all of the above – described problems to be either mitigated or eliminated which is discussed in the following paragraphs. It is proposed to construct the three major railroad tunnels which will be required through the Tehachapi Mountains for the California High Speed Rail Passenger System through private long term low interest financing mechanisms via a public – private – partnership vehicle. The financing instruments to be utilized can be either tax-exempt revenue bonds or other suitable long-term low interest rate debt financing instruments which are repaid through unit charge assessments on a per train basis to be levied upon the operators.

This financing method is similar to that utilized for repayment of the part revenue bonds and the Federal loan used for the construction of the 22 – mile long Alameda Corridor project in Southern California by the Ports of Los Angeles and Long Beach. For freight transport, the unit charge assessments would be levied against the private railroads (Union Pacific or Burlington Northern Santa Fe) on a per train or per ton basis or against trucking companies who would utilize the intermodal

## Comment Letter PH-F031B Continued

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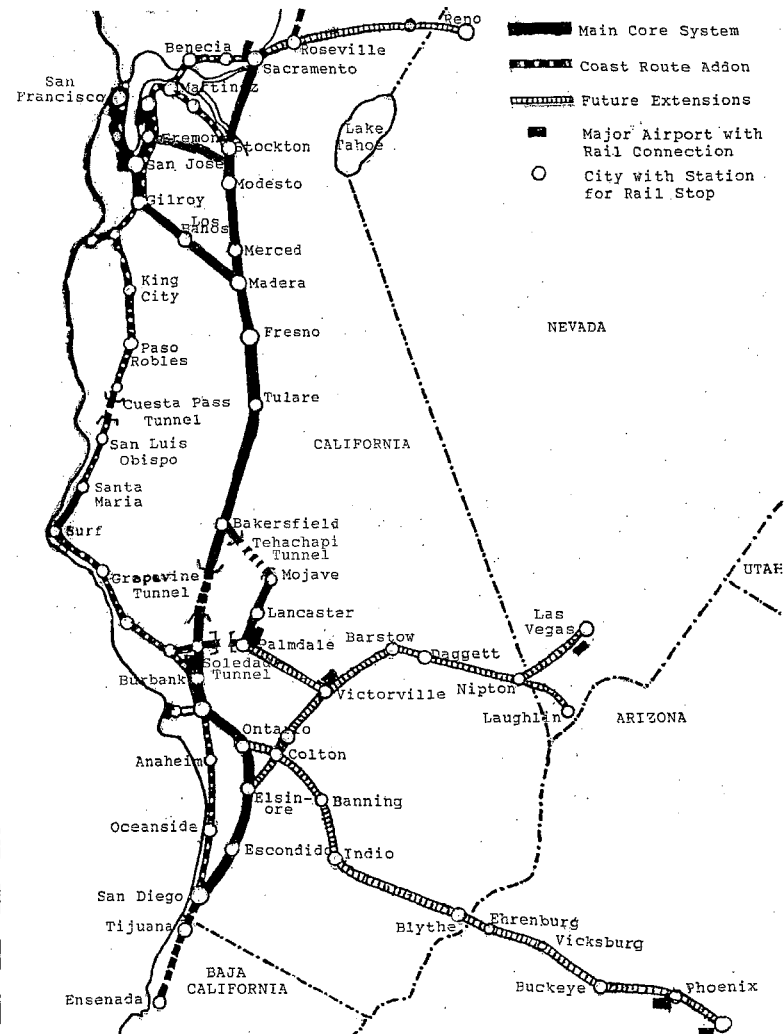
service for diversion of either trailers or whole trucks hauled by that car from road to rail and or its operator. For the affected commuter rail passenger trains operated by the Southern California Regional Rail Authority (SCRRA) the financing repayment charges would be levied on a unit per train or per passenger basis.

A separate unit per train or per passenger charge would need to be levied against the California High Speed Rail Authority (CHSRA) for the passage of the high speed passenger trains through the individual tunnels to the private entity for debt service repayment as well as track maintenance and electricity cost reimbursement until the financing instruments are retired.

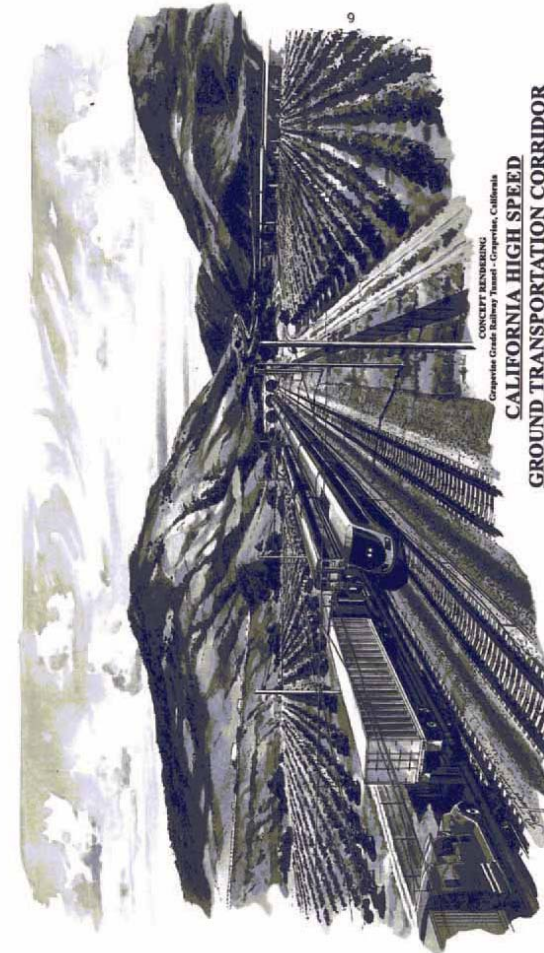
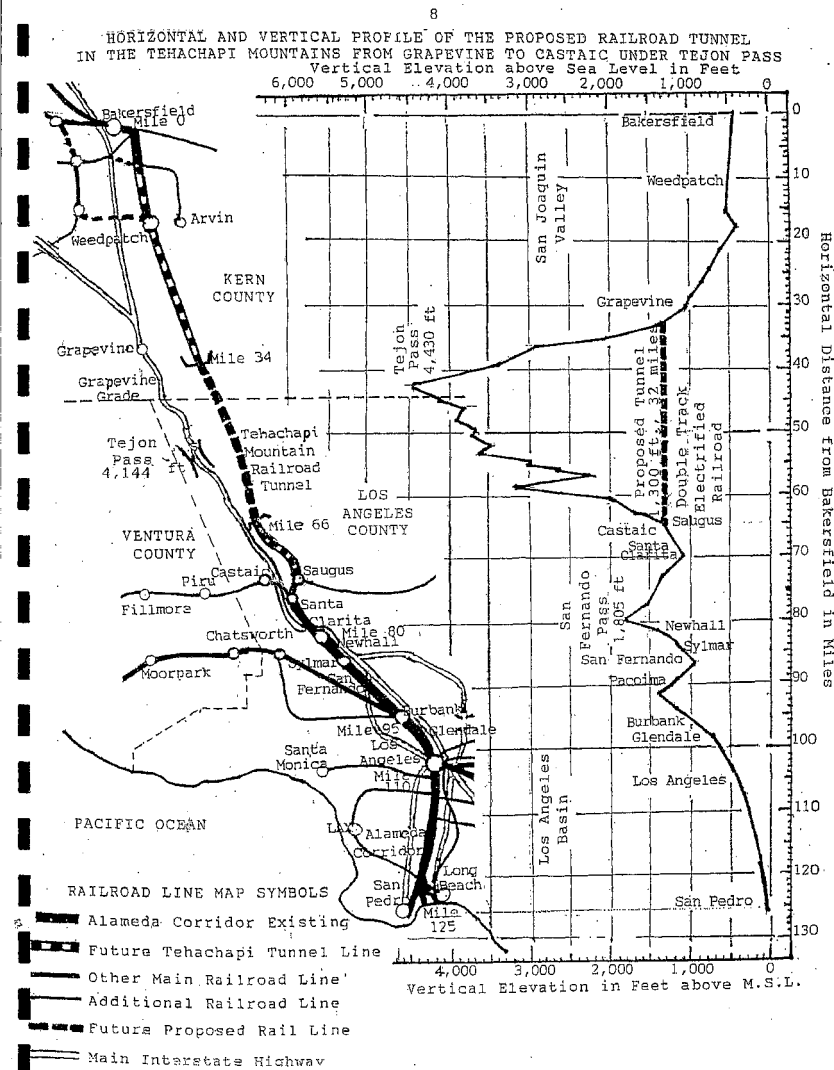
The three railroad tunnels to be constructed through the Tehachapi Mountains between Los Angeles and Bakersfield as a part of the proposed long term low interest private sector financing mechanisms are as follows: 1) the 32 – mile long north – south Grapevine Grade railroad tunnel through the Tehachapi Mountains between Grapevine and Castaic for the route from Los Angeles to Bakersfield parallel to the Interstate 5 freeway; 2) the 29 – mile long east – west Tehachapi Mountain railroad tunnel between Caliente and Reefe City for the route from Bakersfield to Mojave parallel to State Highway 58; 3) the 17 – mile long east – west Soledad Canyon railroad tunnel between Ravenna and Saugus for the Antelope Valley line between Santa Clarita and Palmdale. These three railroad tunnels have a total distance of 78 miles, and constitute critical components of the proposed California High Speed Rail System between Los Angeles and Bakersfield to connect Northern and Southern California.

The high speed passenger trains of the public California High Speed Rail Authority are expected to operate in all three of the proposed Grapevine Grade, Tehachapi Mountains and Soledad Canyon railroad tunnels, with the major traffic flow through the Grapevine tunnel. In contrast, the main freight train flows will be through the Tehachapi Mountain railroad tunnel are expected to be freight trains of the private Union Pacific Railroad and the Burlington Northern Santa Fe Railway carrying intermodal containers and other commodities. In addition, there are expected to be large scale movements of both intermodal trailers plus whole trucks on a scheduled shuttle service between Los Angeles and Bakersfield and beyond through the Grapevine Tunnel plus other

PROPOSED ROUTING OF THE EXTENDED CALIFORNIA HIGH SPEED RAIL PASSENGER SYSTEM



## Comment Letter PH-F031B Continued



EIR-000148



Comment Letter PH-F031B Continued

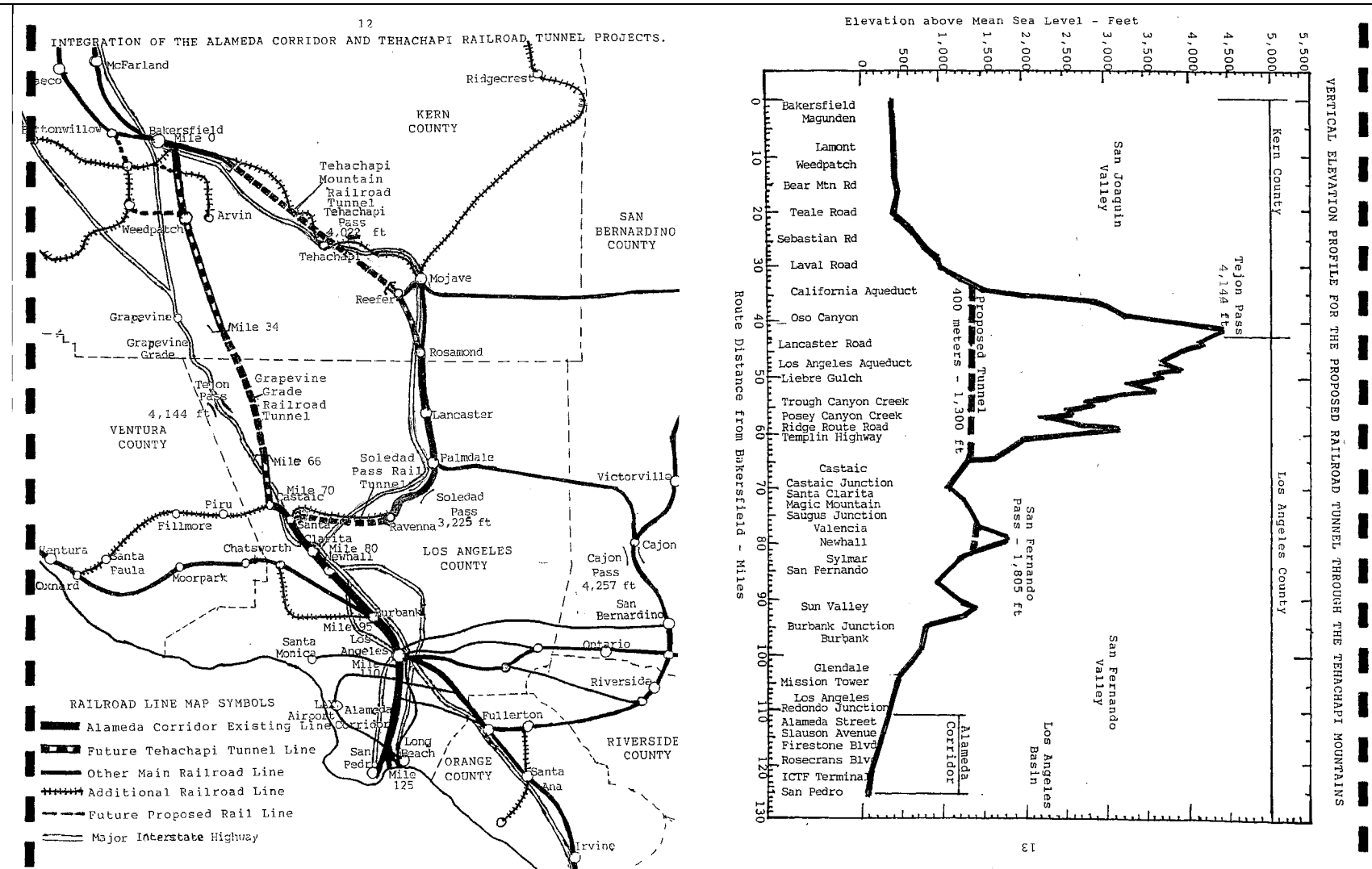


EIR-000149

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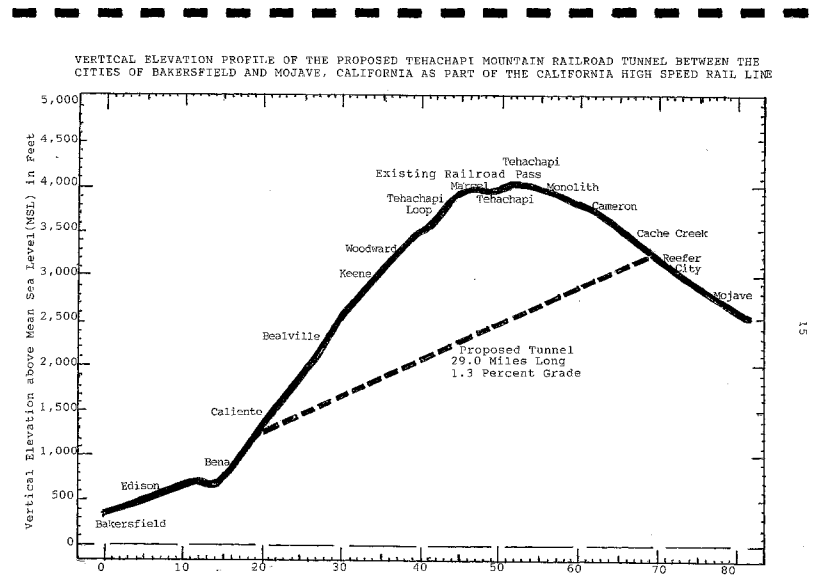
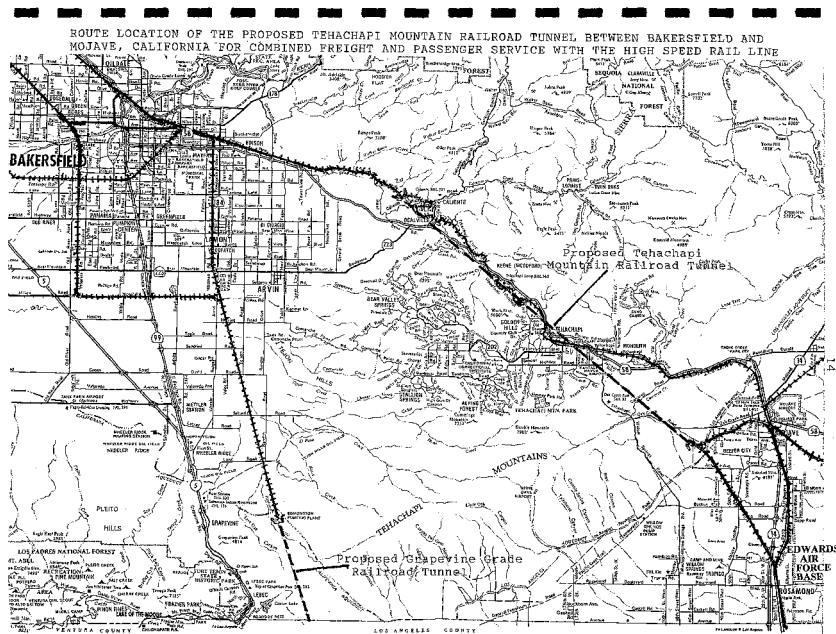
TEHACHAPI MOUNTAIN  
RAILROAD TUNNELS

## Comment Letter PH-F031B Continued

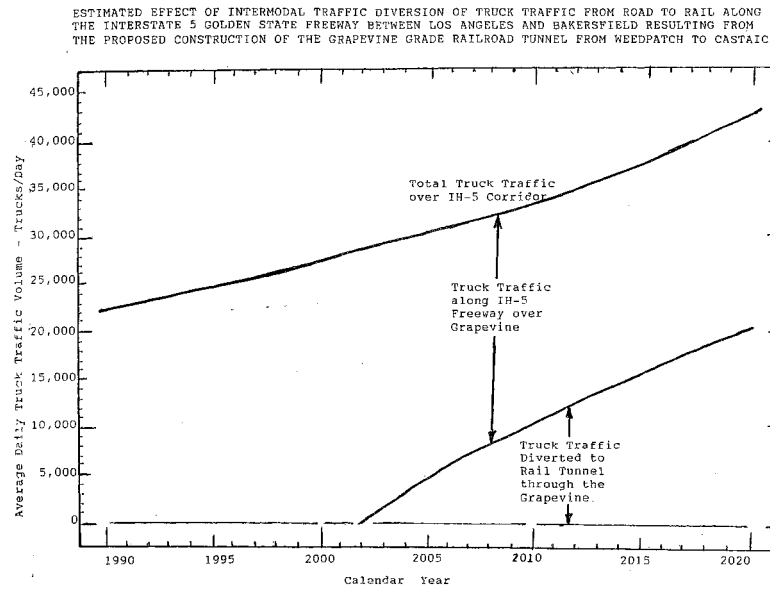




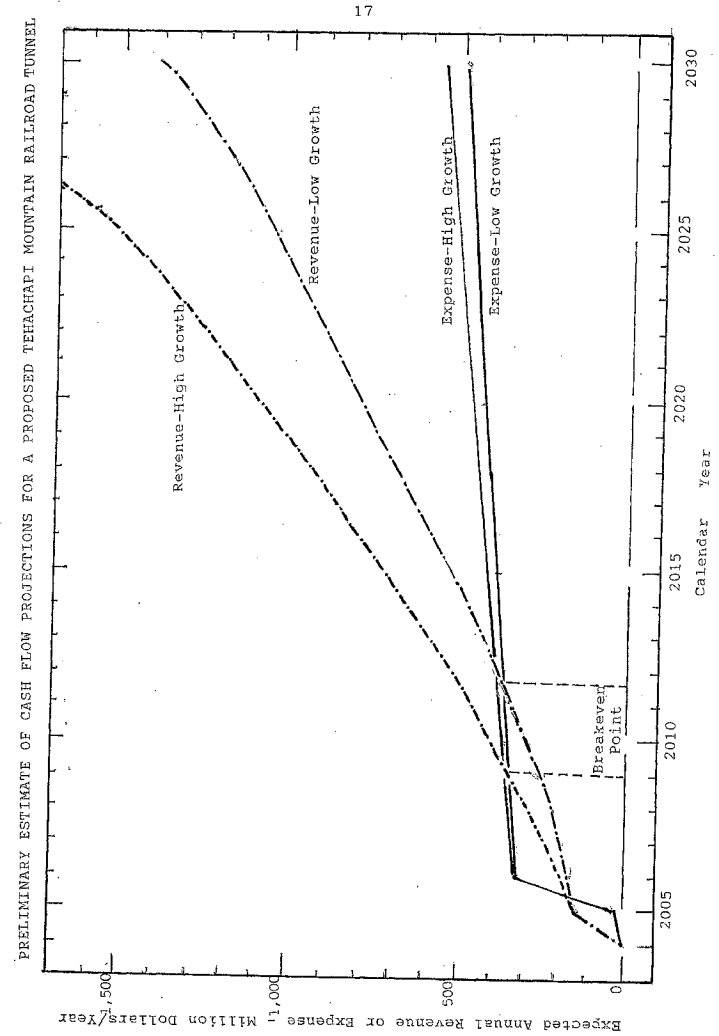
## Comment Letter PH-F031B Continued



## Comment Letter PH-F031B Continued



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## Comment Letter PH-F031B Continued

Grapevine Grade  
Tunnel Project  
Cash Flow Analysis \$US

Page 1 of 2

		Utilization of Truck Traffic					
		10%	15%	20%	25%	50%	75%
Traffic Assumptions:							
Truck Traffic (number of trucks per year)	7,300,000	730,000	1,095,000	1,460,000	1,825,000	3,650,000	5,475,000
Passenger Trains	100 /day	36,500	38,500	36,500	36,500	36,500	36,500
Revenue Assumptions:							
Revenue per Truck		\$ 140	\$ 140	\$ 140	\$ 140	\$ 140	\$ 140
Revenue per Passenger Train		\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000	\$ 7,000
Revenue:							
Trains:							
Intermodal Trains		\$ 102,200,000	\$ 153,300,000	\$ 204,400,000	\$ 255,500,000	\$ 511,000,000	\$ 766,500,000
Passenger Trains		\$ 256,900,000	\$ 269,550,000	\$ 259,800,000	\$ 255,500,000	\$ 255,500,000	\$ 255,500,000
Total Train Revenue		\$ 359,100,000	\$ 422,850,000	\$ 464,200,000	\$ 511,000,000	\$ 766,500,000	\$ 1,022,000,000
Truck Stop:							
Fuel	\$ 7.50 per tk	\$ 5,475,000	\$ 8,212,500	\$ 10,950,000	\$ 13,875,000	\$ 27,375,000	\$ 41,062,500
Overnight Parking		\$ 6,205,000	\$ 6,205,000	\$ 6,205,000	\$ 6,205,000	\$ 6,205,000	\$ 6,205,000
Food, Showers, etc.		\$ 9,125,000	\$ 9,125,000	\$ 9,125,000	\$ 9,125,000	\$ 9,125,000	\$ 9,125,000
Warehouses		\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000	\$ 1,800,000
Total Truck Stop Revenue		\$ 22,725,000	\$ 35,462,500	\$ 28,900,000	\$ 32,975,000	\$ 44,625,000	\$ 58,312,500
Total Revenue		\$ 381,825,000	\$ 458,312,500	\$ 493,100,000	\$ 543,975,000	\$ 811,125,000	\$ 1,080,312,500
Expenses:							
Train:							
Operations		\$ 1,600,000	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000	\$ 1,600,000
Administration	2.0%	\$ 7,164,000	\$ 8,176,000	\$ 9,188,000	\$ 10,200,000	\$ 15,300,000	\$ 20,400,000
Labor	2.0%	\$ 7,164,000	\$ 8,176,000	\$ 9,188,000	\$ 10,200,000	\$ 15,300,000	\$ 20,400,000
Total Train Expense		\$ 15,928,000	\$ 17,952,000	\$ 19,976,000	\$ 22,000,000	\$ 32,200,000	\$ 42,400,000
Truck Stop:							
Fuel	\$ 5.75 per tk	\$ 2,737,500	\$ 4,106,250	\$ 5,475,000	\$ 6,843,750	\$ 13,687,500	\$ 20,531,250
Overnight Parking		\$ 620,000	\$ 620,000	\$ 620,000	\$ 620,000	\$ 620,000	\$ 620,000
Food, Showers, etc.		\$ 6,387,500	\$ 6,387,500	\$ 6,387,500	\$ 6,387,500	\$ 6,387,500	\$ 6,387,500
Warehouses		\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000	\$ 192,000
Total Truck Stop Expense		\$ 9,937,000	\$ 11,395,750	\$ 12,674,500	\$ 14,243,250	\$ 20,887,500	\$ 27,731,250
Total Expenses		\$ 25,865,000	\$ 29,347,750	\$ 32,650,500	\$ 36,243,250	\$ 53,087,500	\$ 70,131,250
Operating Profit		\$ 355,960,000	\$ 428,964,750	\$ 460,449,500	\$ 507,731,750	\$ 758,037,500	\$ 1,010,181,250

Grapevine\_Grade\_Tunnel\_Project\_011

Page 2 of 2

## Alternative A - Subsidized Loan at 3% Interest Rate

Operating Profit		Utilization of Truck Traffic					
		10%	15%	20%	25%	50%	75%
		\$ 3,387,875.00	\$ 4,085,064.00	\$ 4,496,420.00	\$ 5,095,350.00	\$ 7,837,977.50	\$ 10,016,125.00
Depreciation		\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000
Interest Expense (1st Year)		\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000
Profit Before Tax		\$ 18,959,485	\$ 2,286,964,241	\$ 2,286,776,919	\$ 3,327,203,241	\$ 3,932,671,481	\$ 4,121,251,241
Income Tax		\$ 56,778,847	\$ 70,806,232	\$ 65,838,997	\$ 101,161,122	\$ 176,788,047	\$ 254,435,372
Net Profit		\$ 10,180,638	\$ 1,958,447,809	\$ 2,006,745,924	\$ 3,239,442,119	\$ 3,755,883,434	\$ 3,866,815,869
Add: Depreciation		\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000
Add: Interest Expense (1st Year)		\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000
Cash Flow Before Debt Service (1st Year)		\$ 268,730,638	\$ 2,727,247,809	\$ 2,775,544,924	\$ 3,902,192,119	\$ 4,914,631,434	\$ 5,035,575,869
Interest Expense (1st Year)		\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000	\$ 103,600,000
Principal Payment (1st Year)		\$ 72,885,000	\$ 72,885,000	\$ 72,885,000	\$ 72,885,000	\$ 72,885,000	\$ 72,885,000
Total Debt Service		\$ 176,485,000	\$ 176,485,000	\$ 176,485,000	\$ 176,485,000	\$ 176,485,000	\$ 176,485,000
Debt Coverage		1.70	1.80	2.10	2.30	3.30	4.30

## Alternative B - Subsidized Loan at 6% Interest Rate

Operating Profit		\$ 3,541,570,000	\$ 4,056,004,000	\$ 4,456,438,000	\$ 5,065,353,500	\$ 7,537,877,500	\$ 10,012,105,000
Depreciation		65,150,000	65,150,000	65,150,000	65,150,000	65,150,000	65,150,000
Interest Expense (1st Year)		\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845
Profit Before Tax		\$ 3,254,260,155	\$ 3,768,694,155	\$ 4,169,138,155	\$ 4,783,043,655	\$ 7,406,567,655	\$ 9,924,795,155
Income Tax		50%			\$ 656,638,172	\$ 1,441,200,275	\$ 2,116,837,425
Net Profit		\$ 2,759,655,155	\$ 3,117,694,425	\$ 3,488,119,155	\$ 4,126,405,483	\$ 5,965,367,380	\$ 7,807,957,730
Add: Depreciation		\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000	\$ 65,150,000
Add: Interest Expense (1st Year)		\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845
Cash Flow Before Debt Service (1st Year)		\$ 3,046,965,000	\$ 3,405,004,270	\$ 3,775,429,000	\$ 4,413,715,173	\$ 6,252,677,225	\$ 8,095,267,575
Interest Expense (1st Year)		\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845	\$ 222,159,845
Principal Payment (1st Year)		\$ 45,832,307	\$ 45,832,307	\$ 45,832,307	\$ 45,832,307	\$ 45,832,307	\$ 45,832,307
Total Debt Service		\$ 268,000,152	\$ 268,000,152	\$ 268,000,152	\$ 268,000,152	\$ 268,000,152	\$ 268,000,152
Debt Coverage		1.32	1.51	1.70	1.64	2.30	2.86

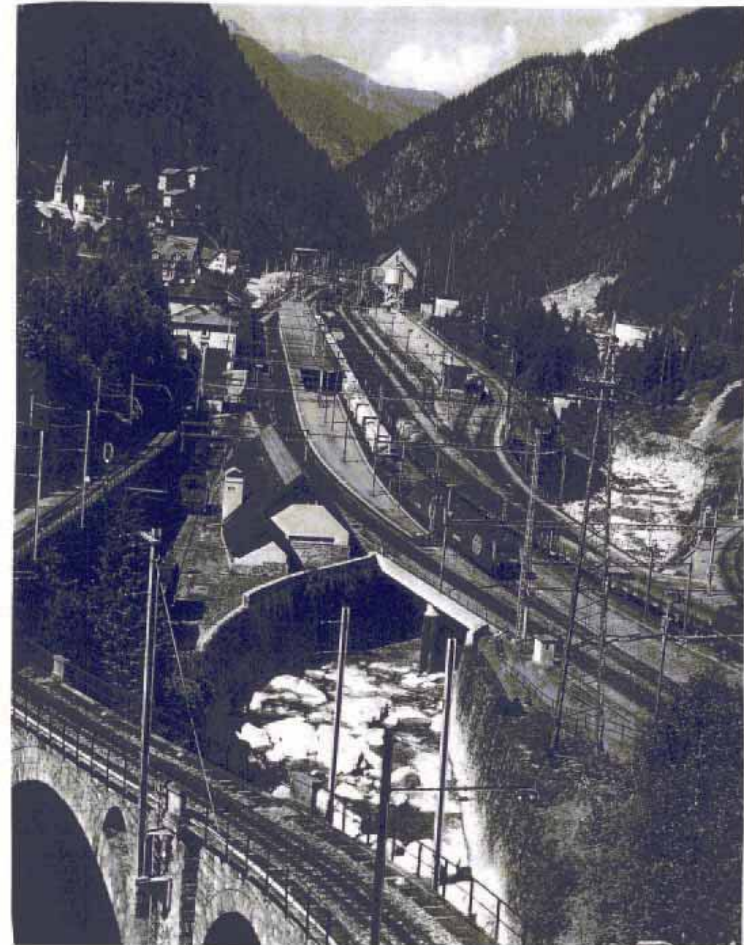
Grapevine\_Grade\_Tunnel\_Project\_011

Comment Letter PH-F031B Continued

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GOTTHARD BASE RAILROAD TUNNEL

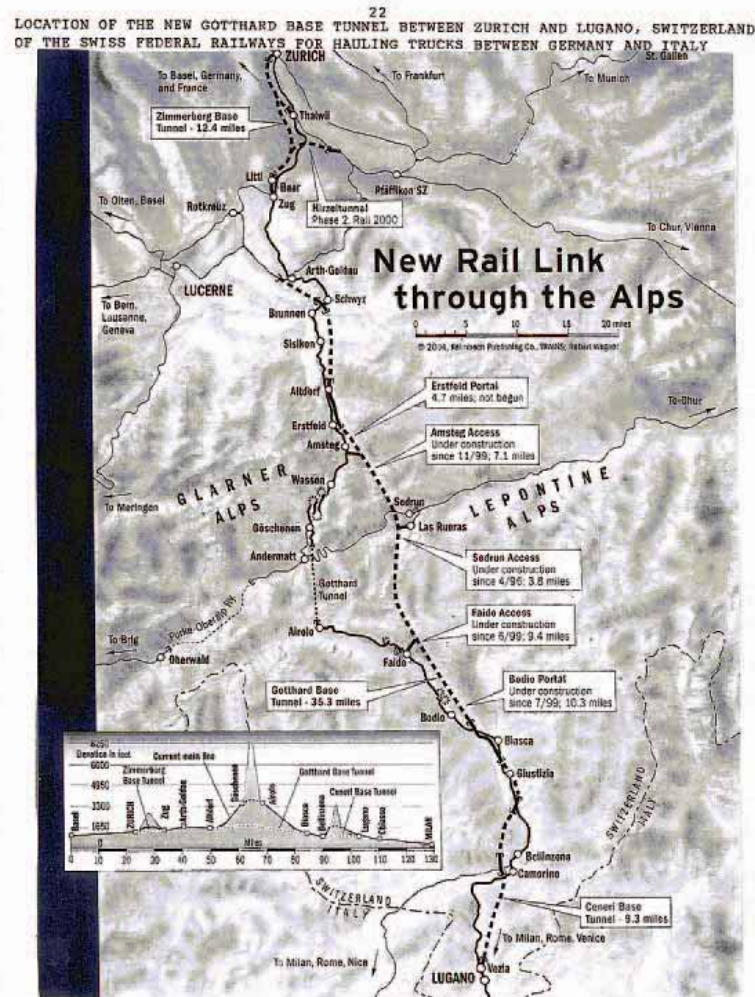
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NORTHERN ENTRANCE TO THE ST. GOTTHARD RAILROAD TUNNEL NEAR GOSHENEN, SWITZERLAND



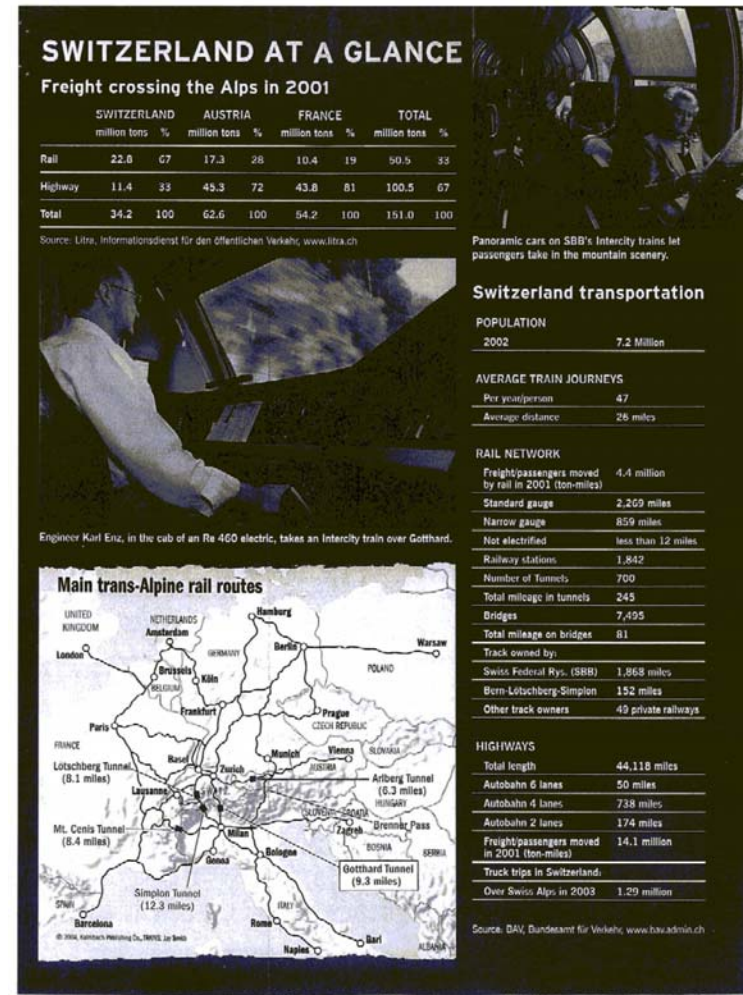
EIR-000160



## Comment Letter PH-F031B Continued



EIR-000161



EIR-000162

## Comment Letter PH-F031B Continued

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NEWSPAPER ARTICLES

25

## Metro News

**California high-speed rail line would reduce congestion, boost economy, study says**

A new environmental impact report states that a high-speed rail linking California's major cities would be less expensive and more environmentally friendly than building out highways and airports.

According to the 2,000-page document released Jan. 27 by the California High-Speed Rail Authority (CHSRA), as many as 68 million riders would use high-speed trains by 2020, significantly reducing congested freeways, improving air quality and boosting the state's economy.

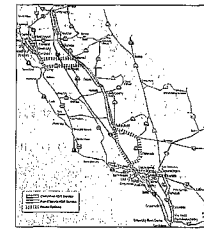
The report compares the 700-mile network option with two other scenarios. Under the first scenario, the state would only complete or build already approved transportation projects. The second one would opt for building more highways and airport gates at a cost of nearly \$82 billion.

"The basic conclusion of this report is that the high-speed train is the best solution for California's intercity travel needs," CHSRA Executive Director Mehdi Morshed stated in a *Los Angeles Times* article.

The network would eventually link San Francisco, Sacramento, Fresno, Los Angeles and San Diego with trains reaching speeds up to 220 mph. At an estimated cost as high as \$37 billion, the system is half as expensive as adding 2,970 miles of new highway lanes, nearly 60 airport gates and five runways.

However, the cost of the project has risen since 1999, when the high-speed rail authority estimated the bullet-train network at \$25 billion.

The first leg of the route from Los Angeles to San Francisco could be funded through a \$9.95 billion bond



A proposed high-speed rail network would link San Francisco, Sacramento, Fresno, Los Angeles and San Diego with trains reaching speeds up to 220 mph.

on the November ballot. But considering the state's budget deficit, Governor Arnold Schwarzenegger proposed to postpone the bond measure until 2006.

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vol 100 no 2



## Comment Letter PH-F031B Continued

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B4, FRIDAY, MARCH 26, 2004 *Los Angeles Times*

## MTA Backs a Bullet Train Route Through High Desert

By KURT SPOFFORD  
Times Staff Writer

The Metropolitan Transportation Authority decided Thursday to back a proposed high-speed rail route through the Antelope Valley.

The route is one of two options being studied by the California High-Speed Rail Authority,

which is now nearing completion on a plan for a \$37-billion electric-powered bullet train that would go from Los Angeles' Union Station to downtown San Francisco in two hours and 25 minutes.

The state-backed authority proposed two routes in an environmental review that was released in January and is to be completed during the next several months. One plan calls for a route between Bakersfield and Los Angeles that would run roughly parallel to the Golden State Freeway. Another option is to build tracks between Bakersfield and Los Angeles through the Antelope Valley, with a stop in Palmdale.

The cost would be about the same for either route. But travel time — the bullet train's prime selling point in what would likely be fierce competition with air travel — would probably increase on a trip from Los Angeles to San Francisco by at least 12 minutes if the train went through the Antelope Valley.

MTA officials said the time lost would be offset by making the train accessible Antelope Valley commuters.

A \$10-billion bond measure allowing construction to begin on the project is set to be placed before voters' statewide in November. But legislators and Gov. Arnold Schwarzenegger are working to move the measure to 2006 because of the budget crisis.

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## AROUND NORTH COUNTY

NORTH COUNTY TIMES

B-3

## Panel wants Riverside County in on rail deal

DAVE DOWNEY  
STAFF WRITER

RIVERSIDE — A regional panel Wednesday urged the state not to leave the high-speed train station without Riverside County.

Voting unanimously, the Riverside County Transportation Commission requested that the California High-Speed Rail Authority include the county in the first phase of the \$37 billion, 700-mile statewide system, rather than relegate the area to a future expansion that may not take place.

The commission also endorsed the state's plans for stations at Escondido, San Diego, UC Riverside, March Air Reserve Base and the Interstates 15-215 interchange in Murrieta.

The panel, which allocates more than \$100 million a year for local freeway, rail and bus projects, also endorsed an alignment of the high-speed rail project that would run from Ontario Airport to Colton, turning south along I-215 through Riverside to Murrieta and Temecula.

Those positions will be forwarded to the rail authority as it prepares to adopt a 2,000-page environmental impact report. Comments are

being accepted through May 15.

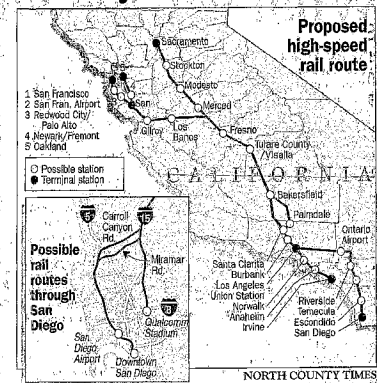
"As voluminous as it is, it is still missing some material," said Carl Schiermeyer, longtime consultant to the commission.

Schiermeyer said it is clear that a \$10 billion bond on the November ballot — at least for now — would fund a first phase defined as Los Angeles to San Francisco. But he said the report is not at all clear on when the section through Riverside County to San Diego would be built; it only suggests pumping extra money from fares into other parts of the system.

Making the picture even more fuzzy, the bond includes \$1 billion for improvements to existing rail lines. And the line on the coast between Los Angeles and San Diego is expected to benefit widely from that pot, receiving money for tunnels, bridges and tracks, Schiermeyer said.

He warned that state politicians might abandon the inland alignment if they see that new high-speed rail between Los Angeles and San Francisco, coupled with improvements farther south, significantly shorten trips between Southern and Northern California.

A few years ago, state rail planners were debating



whether to take the high-speed rail down the coast or through the rapidly developing I-15 corridor through Riverside County to San Diego. At that time, seaside cities rose up to protest a coastal high-speed line, saying it would ruin the picturesque and peaceful ambience of the beach.

Then, said Schiermeyer, "We stood up and said, 'We want it.'" And the rail agency designated the inland route through Riverside, Temecula and Escondido as the preferred one for reaching San Diego.

"But," he said, "they have never cut off the coast."

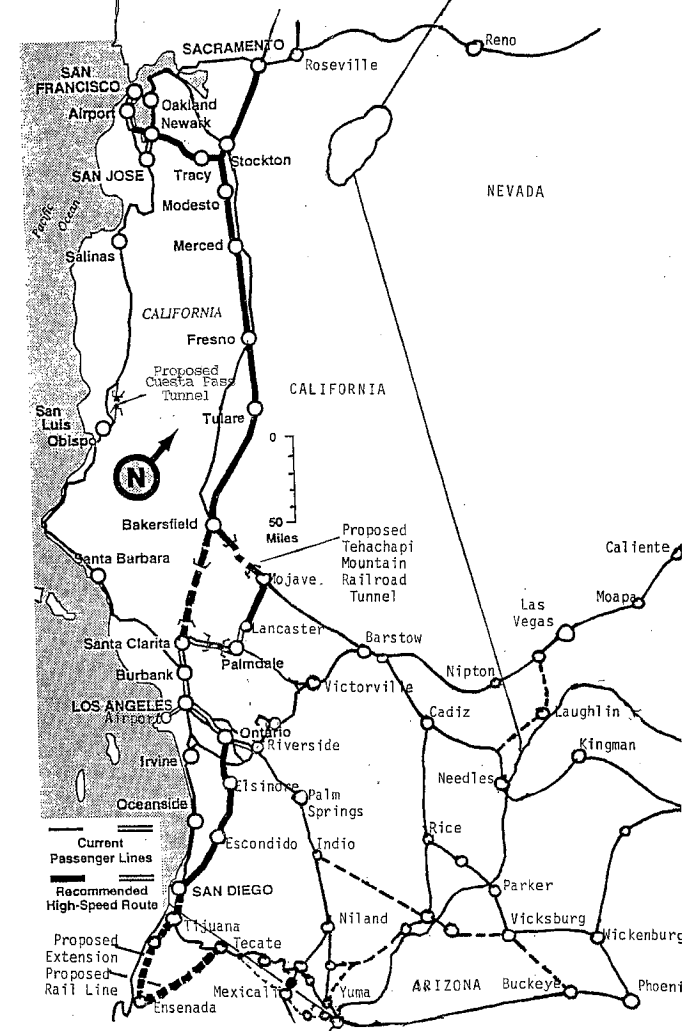
In other business, commissioners voted to create a public transit subcommittee, upon the suggestion of an auditor.

## Comment Letter PH-F031B Continued

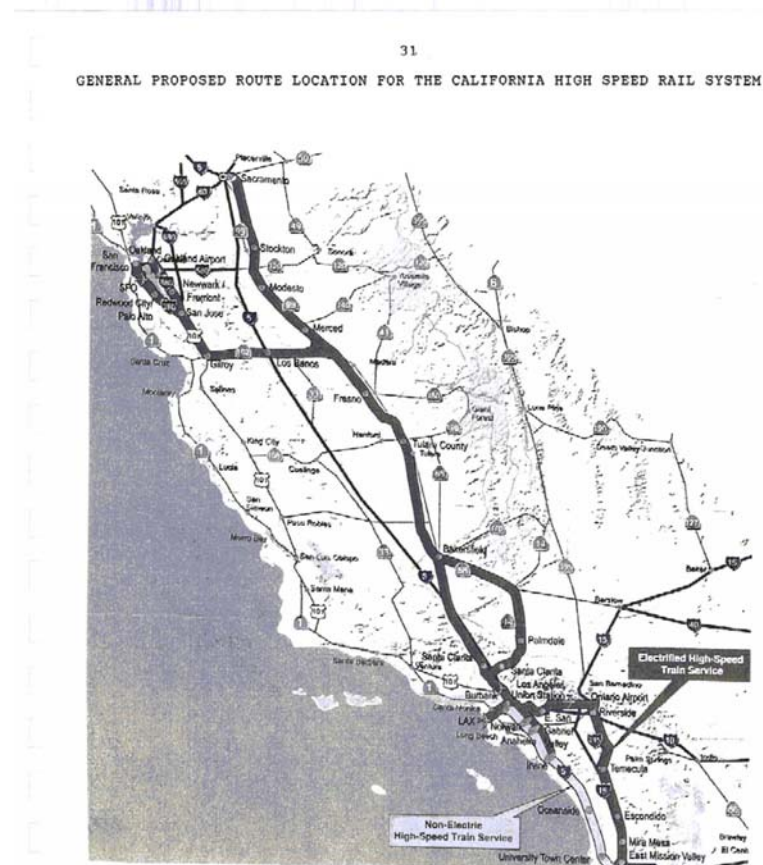
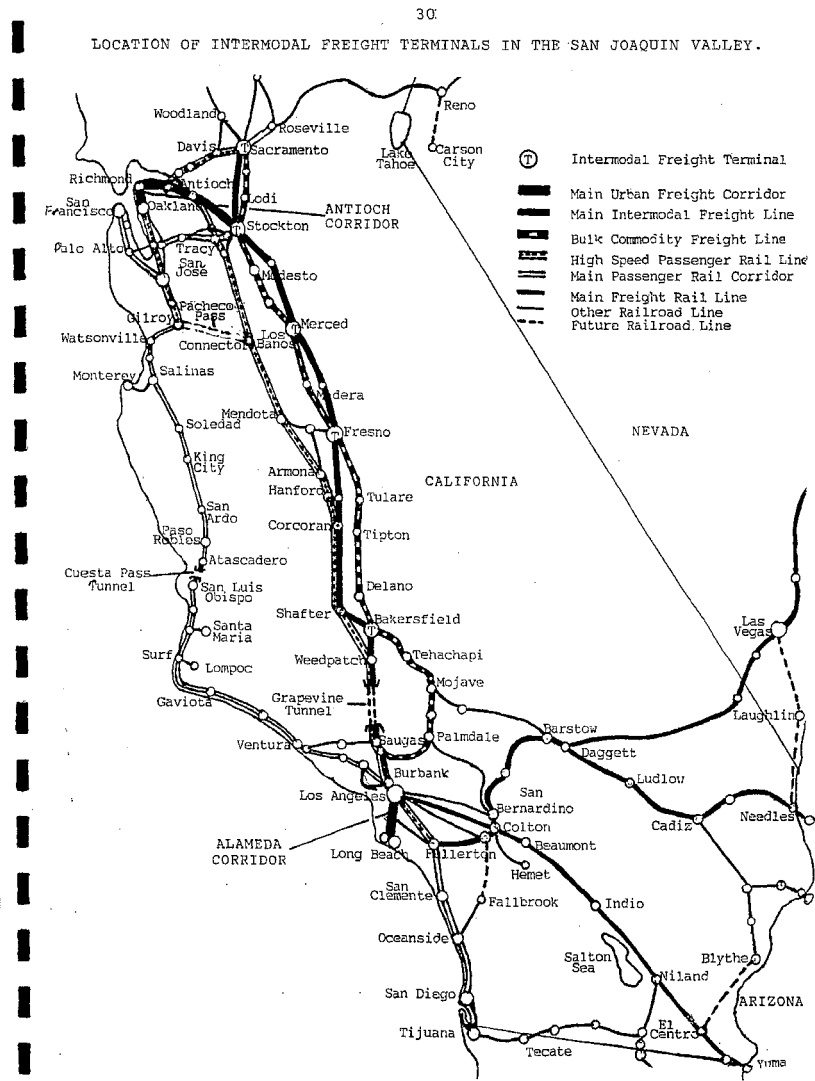
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HIGH SPEED RAIL ROUTES

ROUTING FOR THE PROPOSED CALIFORNIA HIGH SPEED RAIL PASSENGER SYSTEM



**Comment Letter PH-F031B Continued**



EIR-000170

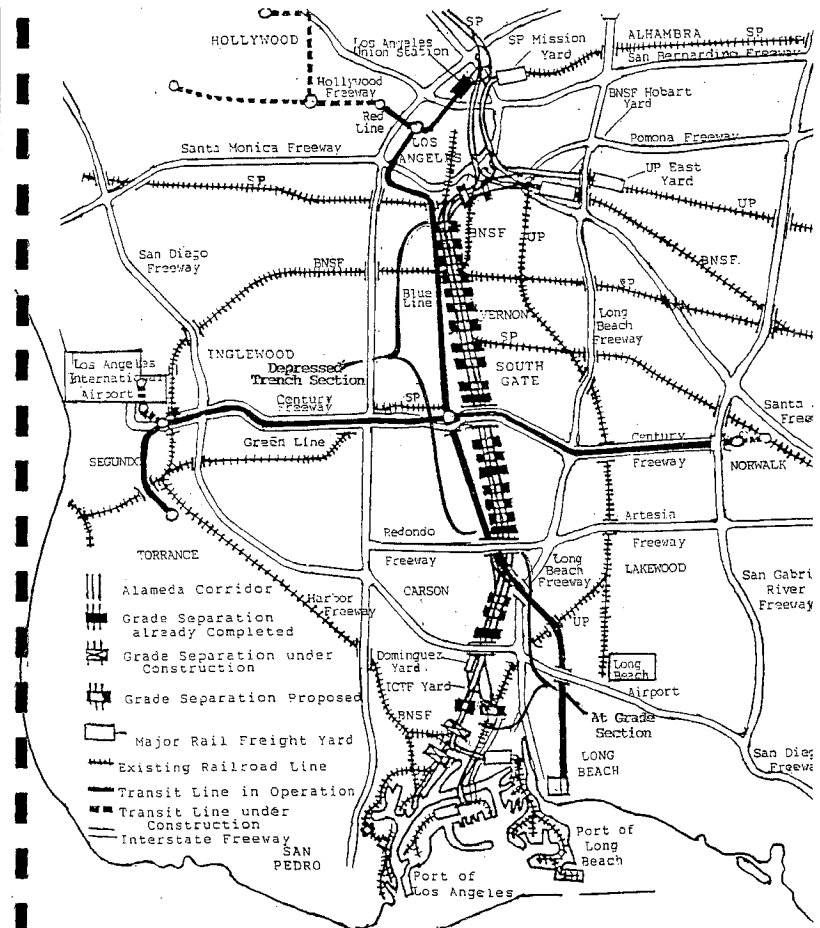
## Comment Letter PH-F031B Continued

32

ALAMEDA CORRIDOR PROJECT

33

## PLANNED MAJOR RAILROAD AND ROADWAY FEATURES OF THE ALAMEDA CORRIDOR PROJECT



## Comment Letter PH-F031B Continued

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## PROPOSED VERTICAL SECTION PROFILE FOR THE ALAMEDA CORRIDOR PROJECT

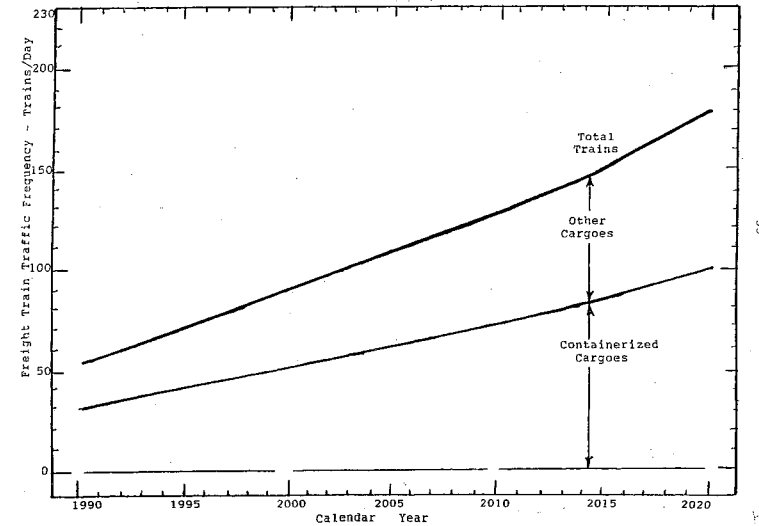
## Depressed Railway Section

Alameda Street  
West Side  
Four LanesDepressed Center  
Railway Trench  
Two TracksSurface  
Spur  
TrackAlameda Street  
East Side  
Two LanesArtesia Freeway to  
Washington Blvd.  
(15 Miles)

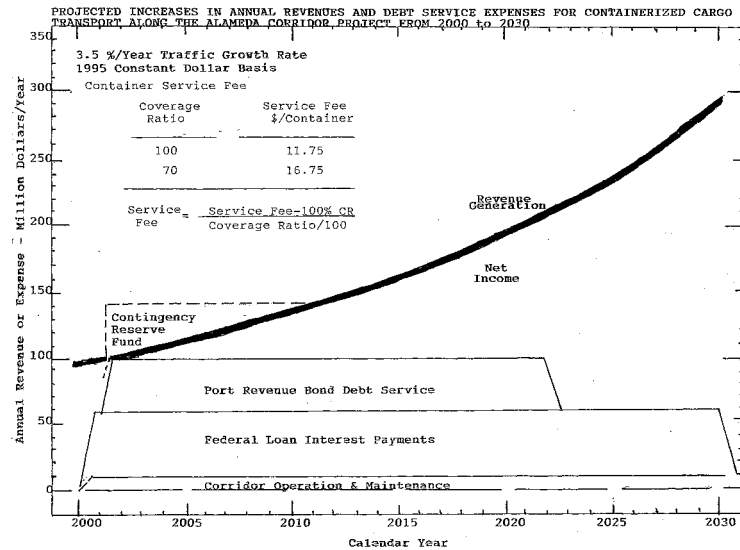
## At Grade Railway Section

Alameda Street  
West Side  
Four LanesCenter Surface  
Railroad Line  
Two TracksRail  
Spur  
TrackAlameda Street  
East Side  
Two LanesTerminal Island to  
Artesia Freeway  
(7 Miles)

## EXPECTED INCREASES IN FREIGHT TRAIN MOVEMENTS ALONG THE ALAMEDA CORRIDOR: 1990-2020\*



## Comment Letter PH-F031B Continued

CAPITAL EXPENSE REQUIREMENTS AND OPERATING FEATURES OF THE ALAMEDA CORRIDOR PROJECT UNDER ALTERNATIVE CONFIGURATIONS<sup>1</sup>

SPECIFIC PARAMETER	FUNDING SOURCE	BASE CASE SINGLE TRACK EXISTING	DOUBLE TRACK WITH NO SEPARATIONS	DOUBLE TRACK WITH SEPARATIONS
Capital Cost (Million \$)	Port Contributions	400.00	400.00	400.00
	Port Revenue Bonds	0.0	600.0	600.0
	State and Local Funds	0.0	143.0	143.0
	MTA Contributions	0.0	0.0	350.0
	Federal Funds	0.0	0.0	400.0
	Total Expense	400.0	1,143.0	1,893.0
	Unit Cost (Million \$/Mile)	18.2	52.0	86.0
	Railroad Expense <sup>2</sup>	0.0	25.0	50.0
Railroad Features	Number of Tracks	1	2	2
	Grade Crossings	31	28	0
	Grade Separations	7	10	39
	Average Train Speed (Mile/Hour)	20	35	40
	Track Capacity (Trains/Day)	40	100	150
	Transit Time (Hours)	4	2	1
	Year Completed	-	2005	2001
	Route Length (Miles)	22	22	22
	Signaling System	ABS	CTC	CTC ATC

## Notes:

- Capital cost factors are based on 1995 constant dollars.
- Abbreviations for signaling systems are as follows:  
ABS=Automatic Block Signals;  
ATC=Automatic Train Control;  
CTC=Centralized Traffic Control.
- Estimated signalling and communication system cost to be paid for separately by the freight railroads.



## Comment Letter PH-F031B Continued

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**EXPECTED PRESENT AND FUTURE ECONOMIC IMPACTS RESULTING FROM  
THE DEVELOPMENT OF THE PROPOSED DUWAMISH CORRIDOR PROJECT  
IN THE PUGET SOUND AREA**

IMPACT	UNITS	1995	2010	2020
Value of Trade	Billion \$/Year	60	100	150
Direct Employment	No. of Jobs	30,000	50,000	70,000
Area Employment	No. of Jobs	120,000	180,000	240,000
Statewide Employment	No. of Jobs	600,000	1,000,000	1,500,000
Direct Payrolls	Million \$/Year	530	660	1,230
Econo Business Revenues	Billion \$/Year	3	6	10
Port Revenues	Billion \$/Year	5	6	12
Economic Activity		10	20	35
Federal Income Tax	Billion \$/Year	1.1	1.9	2.7
Federal Customs duties	Million \$/Year	560	900	1,250
State & Local Taxes	Million \$/Year	170	260	340
Trade Volume	Million Metric Tons/Year	37	75	100
Container Shipments	Million TEU/Year	3	7	10
Total Train Movements	Trains/Day	90	320	440

**EXPECTED PRESENT AND FUTURE ECONOMIC IMPACTS RESULTING  
FROM THE DEVELOPMENT OF THE ALAMEDA CORRIDOR PROJECT  
IN THE SOUTHERN CALIFORNIA REGION**

IMPACT	UNITS	1995	2010	2020
Value of Trade	Billion \$ Year	116.0	253.0	355.0
Direct Employment	No. of Jobs	30,000	70,000	100,000
Total Employment	No. of Jobs	75,000	180,000	250,000
National Employment	No. of Jobs	2,500,000	5,700,000	8,000,000
Affected Payrolls	Billion \$ Year	100.0	230.0	325.0
Federal Income Tax	Billion \$ Year	14.2	30.9	95.5
Federal Customs Duties	Billion \$ Year	2.9	5.9	8.4
State & Local Taxes	Billion \$ Year	5.4	11.6	16.5
Trade Volume	Million Metric Tons/Year	120	180	235
Container Shipments	Million TEU/Year	5	12	17
Total Train Movements	Trains/Day	255	510	710

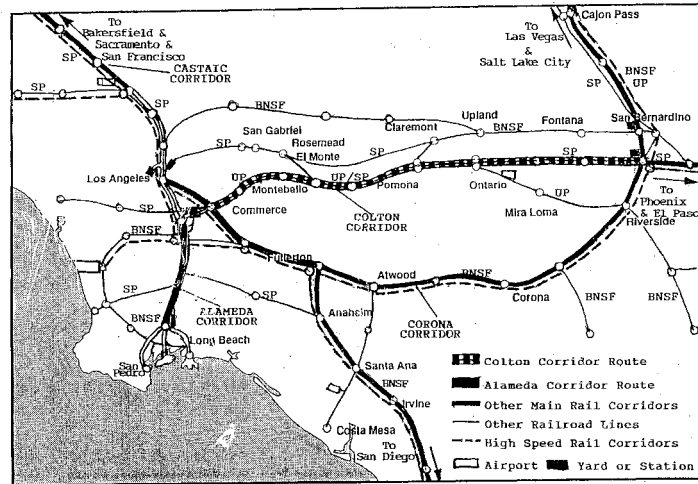
39

SOUTHERN CALIFORNIA

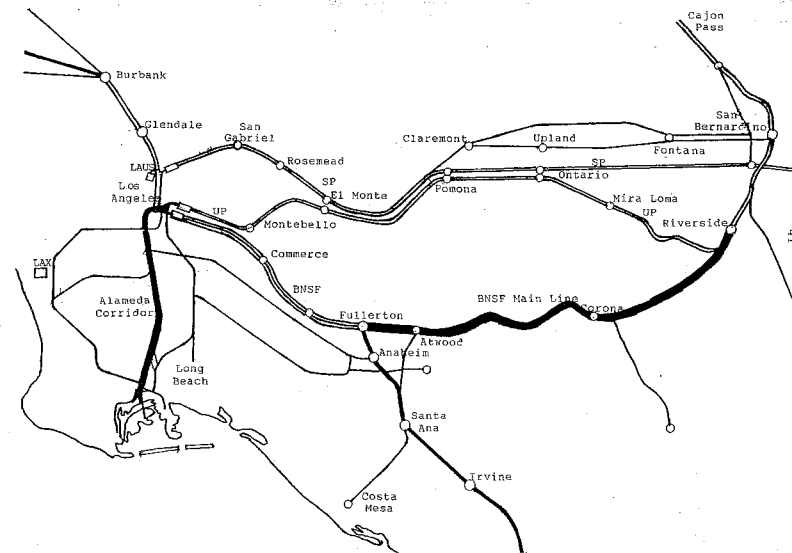
RAILROAD NETWORKS

## Comment Letter PH-F031B Continued

PRESENT AND FUTURE FREIGHT AND PASSENGER RAILROAD LINE CORRIDORS IN THE LOS ANGELES BASIN.



TRIPLE TRACKING EXPANSION OF THE BNSF MAIN RAILROAD LINE FROM FULLERTON TO RIVERSIDE



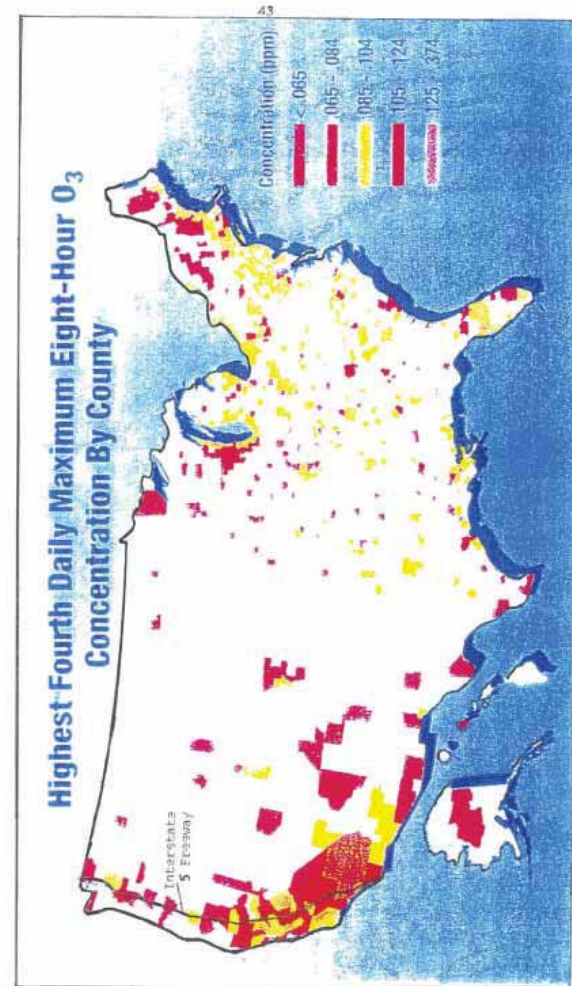
## Comment Letter PH-F031B Continued

42

OZONE AIR QUALITY

NONATTAINMENT AREAS

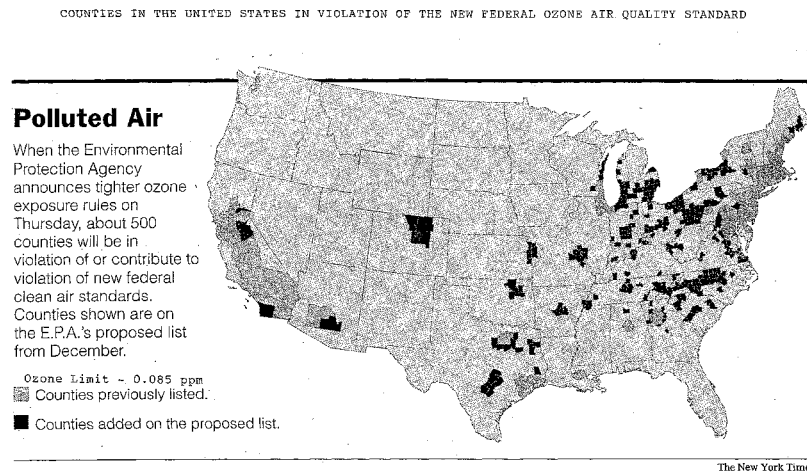
OBSERVED VALUES FOR THE FOURTH HIGHEST AMBIENT AIR QUALITY READINGS FOR ATMOSPHERIC OZONE LEVELS ACROSS THE UNITED STATES AND ALONG THE INTERSTATE 5 FREEWAY CORRIDOR STATES IN 1998



Fourth Highest Maximum Eight Hour Ozone Ambient Air Concentrations during 1998 from the National Air Quality and Emissions Trends Report: 1998. These Areas shown in Color could be Redesignated as Being in Nonattainment by the U.S. Environmental Protection Agency.

EIR-000182

## Comment Letter PH-F031B Continued



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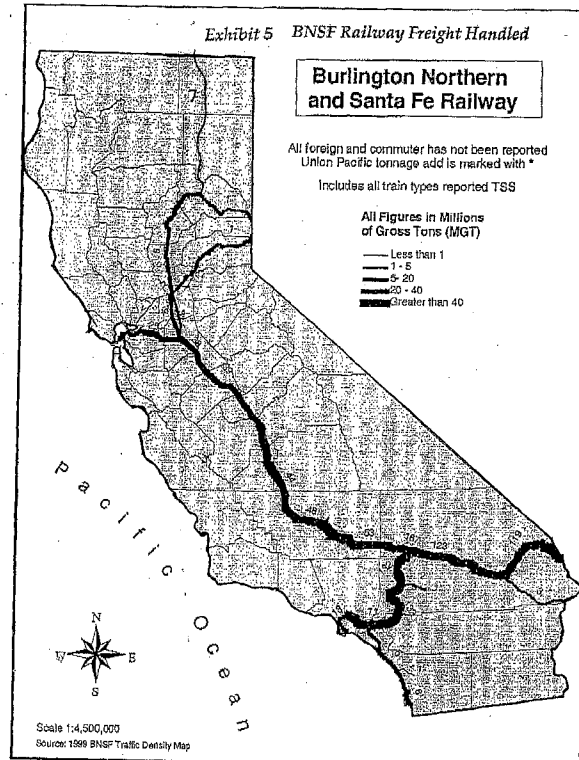
CALIFORNIA RAILROAD

FREIGHT TRAFFIC FLOWS

## Comment Letter PH-F031B Continued

46

EXISTING FREIGHT TRAFFIC DENSITIES ON THE RAIL LINES OF THE BURLINGTON NORTHERN SANTA FE RAILROAD IN CALIFORNIA IN 1999

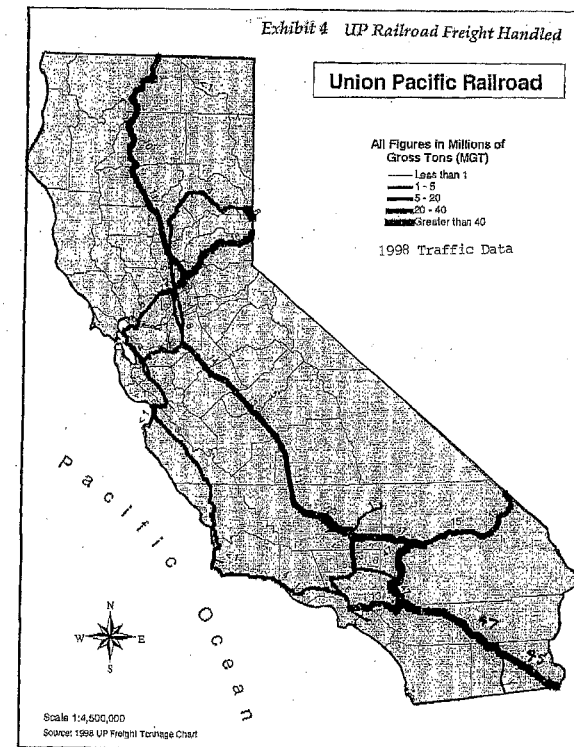


CALIFORNIA FREIGHT RAIL PLAN

CALIFORNIA DEPARTMENT OF TRANSPORTATION

47

EXISTING FREIGHT TRAFFIC DENSITIES ON THE RAIL LINES OF THE UNION PACIFIC RAILROAD IN THE STATE OF CALIFORNIA FOR THE YEAR 1998



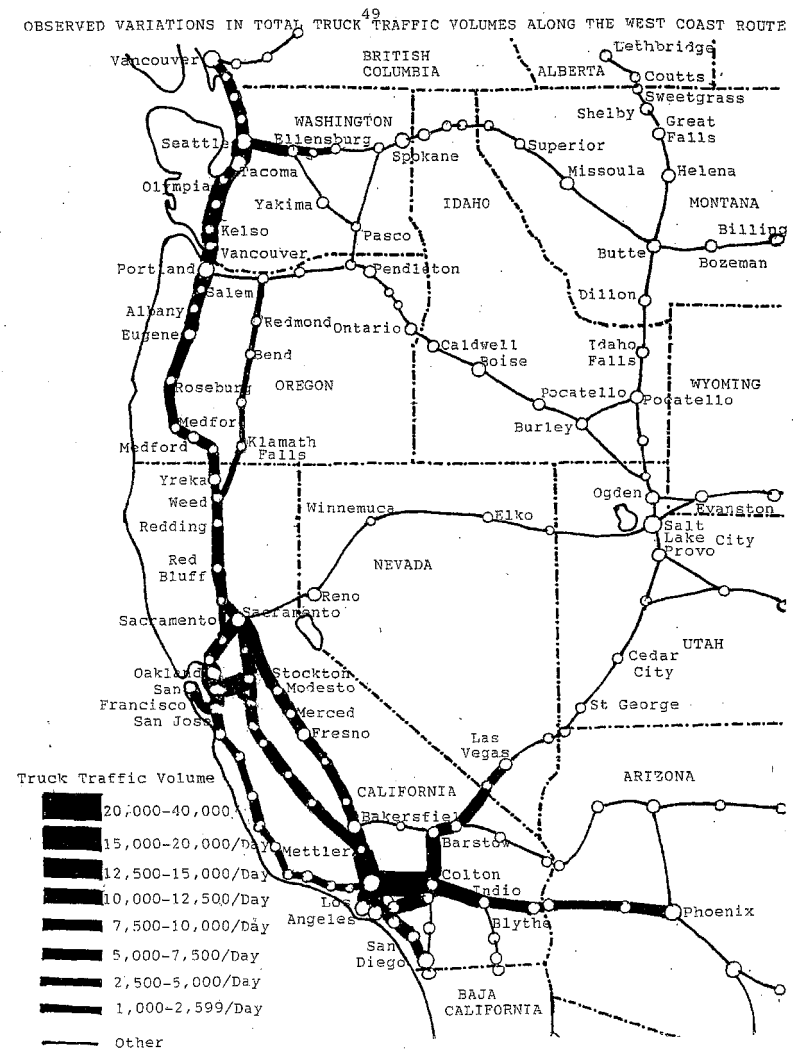
CALIFORNIA FREIGHT RAIL PLAN

CALIFORNIA DEPARTMENT OF TRANSPORTATION

## Comment Letter PH-F031B Continued

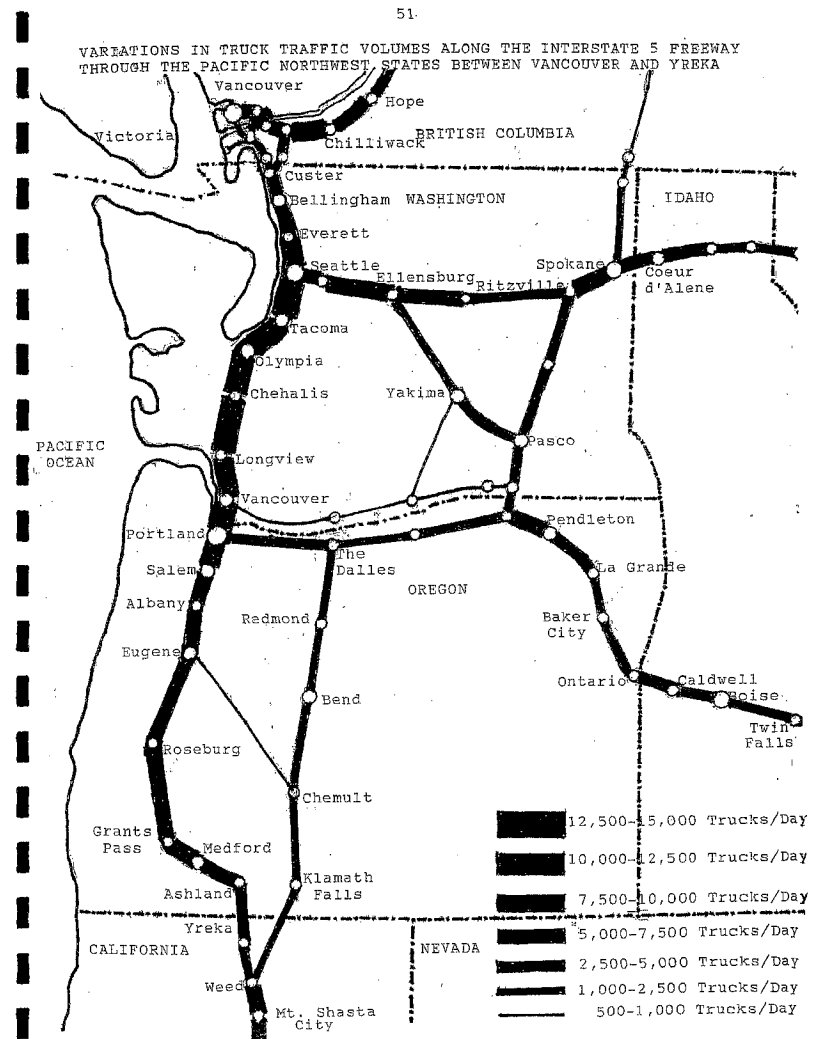
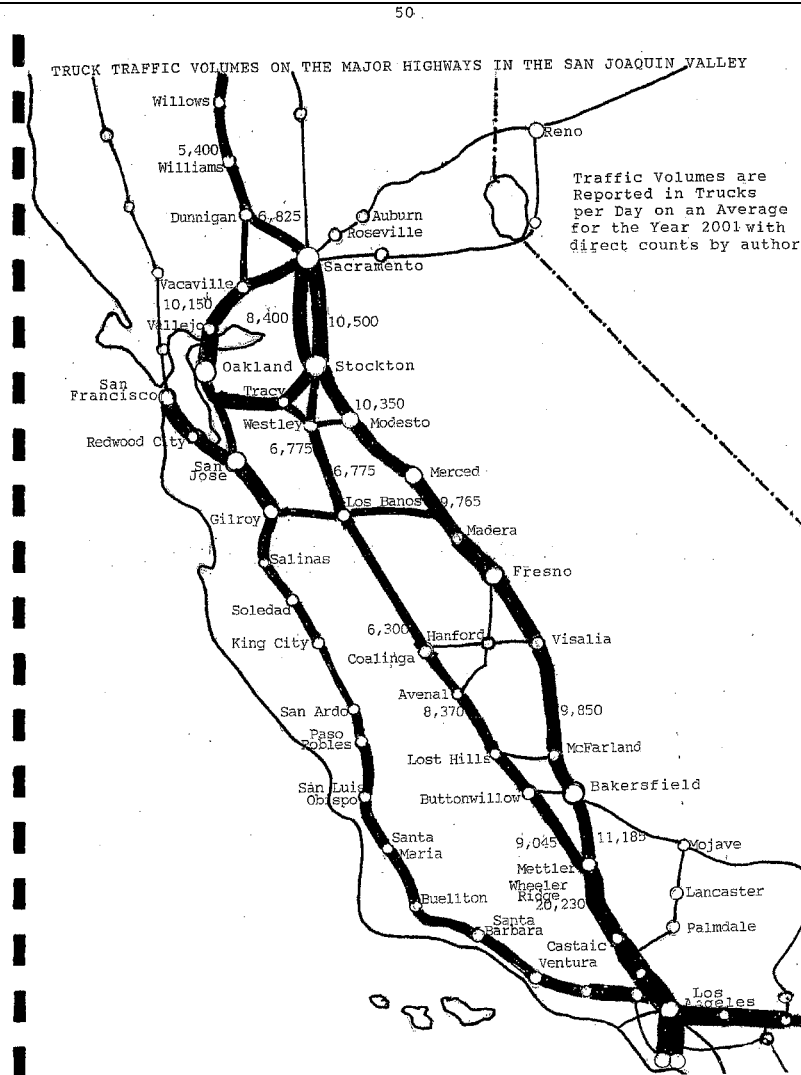
48

HIGHWAY TRUCK  
TRAFFIC VOLUMES

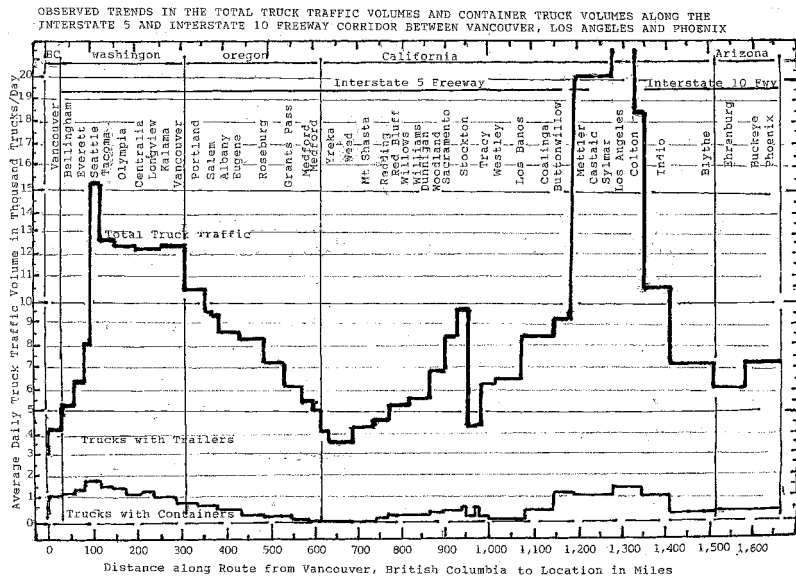




## Comment Letter PH-F031B Continued



## Comment Letter PH-F031B Continued



SUMMARY OF CONTAINER AND TRUCK TRAFFIC VOLUMES  
ALONG THE WEST COAST INTERSTATE FREEWAY CORRIDORS  
BY RANKING BASED ON TOTAL TRUCK MOVEMENTS

Intercity Corridor	Interstate Highway	Distance (Miles)	Containers (Trucks/day)	Trailers (Trucks/day)	Total Trucks (Trucks/day)	Percent of Total
Sylmar-Mettler	I-5	65	1,045	19,185	20,230	5.17
Seattle-Olympia	I-5	60	1,230	11,520	12,750	9.66
Longview-Portland	I-5	45	815	11,735	12,550	6.48
Centralia-Longview	I-5	50	1,055	11,535	12,450	8.56
Olympia-Centralia	I-5	25	1,165	11,235	12,400	9.40
Hayward-Tracy	I-580	30	1,150	10,870	12,020	9.57
Mettler-Bakersfield	SR-99	25	500	10,885	11,185	4.47
Colton-Indio	I-10	70	1,065	9,540	10,605	10.04
Portland-Salem	I-5	40	800	9,710	10,510	7.61
Sacramento-Vallejo	I-80	60	1,450	8,700	10,150	14.28
Bakersfield-Fresno	SR-99	115	180	9,870	9,850	1.82
Stockton-Fresno	SR-99	115	375	9,390	9,765	3.84
Mettler-Buttonwillow	I-5	40	545	8,500	9,045	6.03
Salem-Eugene	I-5	60	550	7,950	8,500	6.47
Stockton-Sacramento	I-5	45	400	8,000	8,400	4.76
Coalinga-Buttonwillow	I-5	75	140	8,230	8,370	1.67
Tracy-Stockton	I-205	25	575	7,750	8,325	6.91
Eugene-Roseburg	I-5	80	100	8,150	8,250	1.21
Roseburg-Grants Pass	I-5	65	50	7,300	7,350	0.68
Blythe-Indio	I-10	95	320	6,730	7,050	4.54
Dunnigan-Sacramento	I-5	35	200	6,625	6,825	2.93
Westley-Coalinga	I-5	110	210	6,150	6,360	3.30
Seattle-Ellensburg	I-90	75	1,800	4,280	6,080	29.61
Blythe-Tonopah	I-10	70	330	5,730	6,060	5.45
Marysville-Burlington	I-5	25	1,480	4,440	5,920	25.00
Dunnigan-Red Bluff	I-5	85	160	5,250	5,400	2.78
Burlington-Bellingham	I-5	25	1,400	3,750	5,150	27.18
Ellensburg-Vantage	I-90	40	980	3,920	4,900	20.00
Red Bluff-Redding	I-5	25	75	4,675	4,750	1.50
Tracy-Wesley	I-580	15	575	3,935	4,510	12.75
Bellingham-Vancouver	I-5	15	1,080	2,950	4,040	26.80
Redding-Siskiyou	I-5	120	0	4,000	4,000	0.00
Grants Pass-Siskiyou	I-5	60	0	4,000	4,000	0.00
Urban Corridors	--	305	1,125	15,230	16,405	7.16
TOTAL CORRIDORS	--	2,270	635	8,505	9,140	6.96

Based on actual truck traffic counts by the author in 2001.

## Comment Letter PH-F031B Continued

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HIGHWAY MAINTENANCE

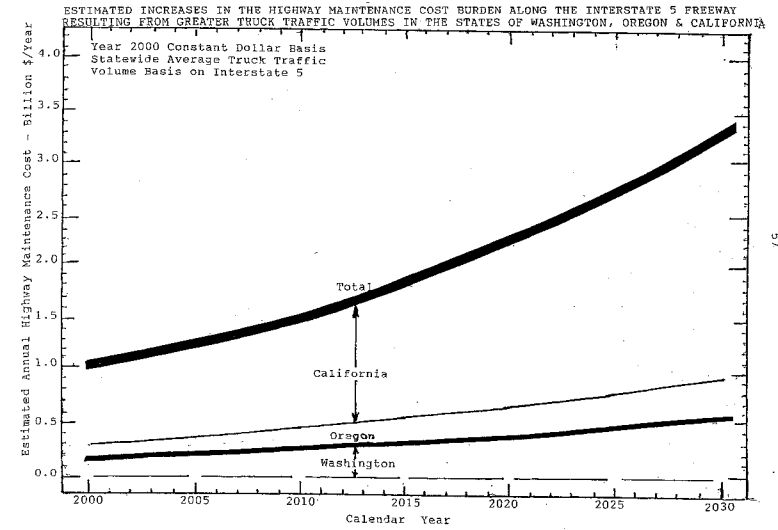
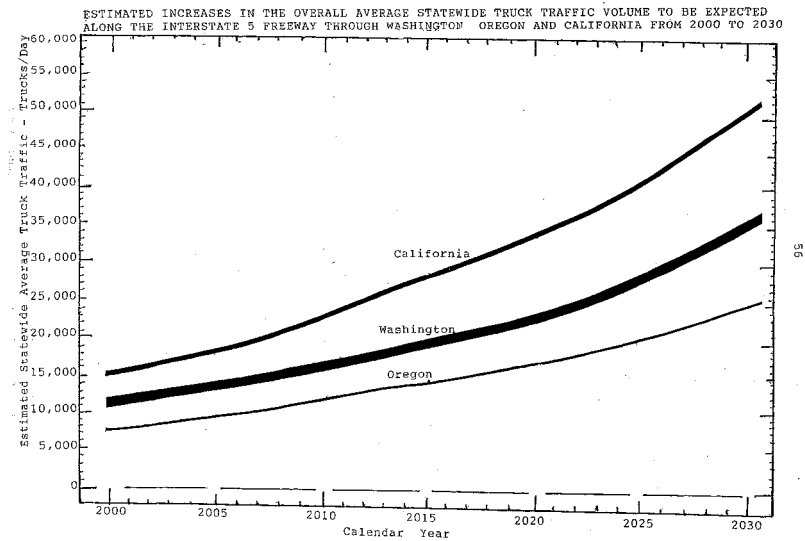
COST BURDENS

55

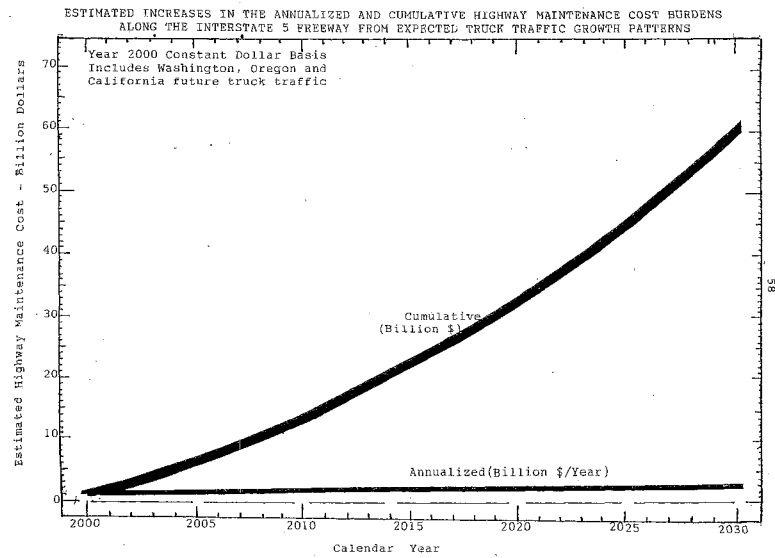
*ESTIMATED INCREASES IN THE AVERAGE STATEWIDE TRUCK TRAFFIC VOLUMES ALONG  
THE INTERSTATE-5 FREEWAY THROUGH THE PACIFIC COAST STATES*

Calendar Year	Washington Trucks/Day	Oregon Trucks/Day	California Trucks/Day	Average Trucks/Day
2000	10,855	7,645	15,445	12,895
2005	13,260	9,340	18,840	15,725
2010	16,195	11,405	23,010	19,210
2015	19,780	13,930	28,105	23,460
2020	22,160	17,015	34,330	28,655
2025	29,505	20,780	41,930	34,995
2030	36,040	25,380	51,210	42,745

## Comment Letter PH-F031B Continued



## Comment Letter PH-F031B Continued

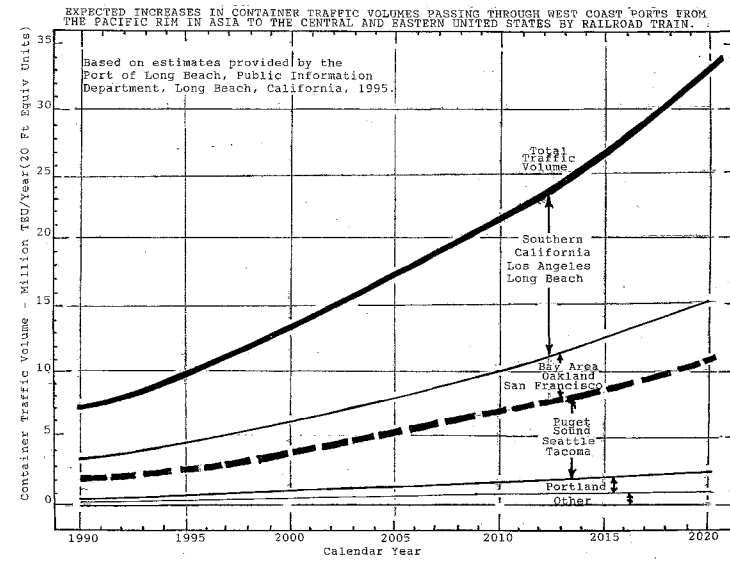
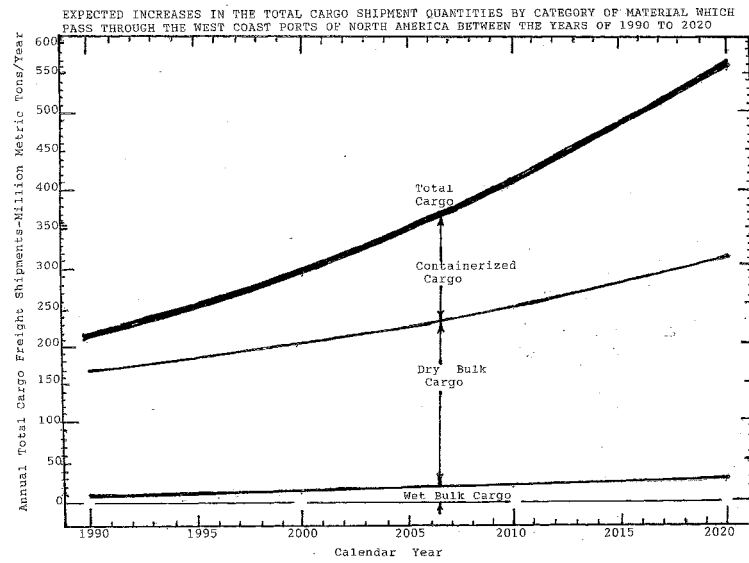


59

PACIFIC COAST

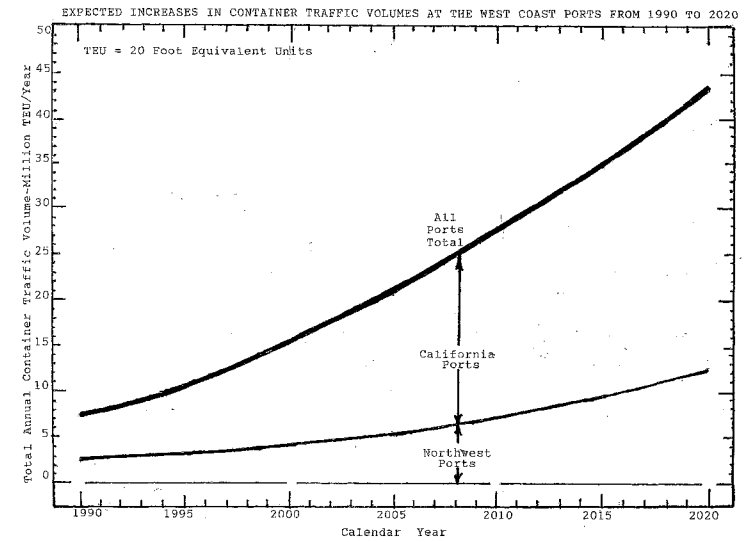
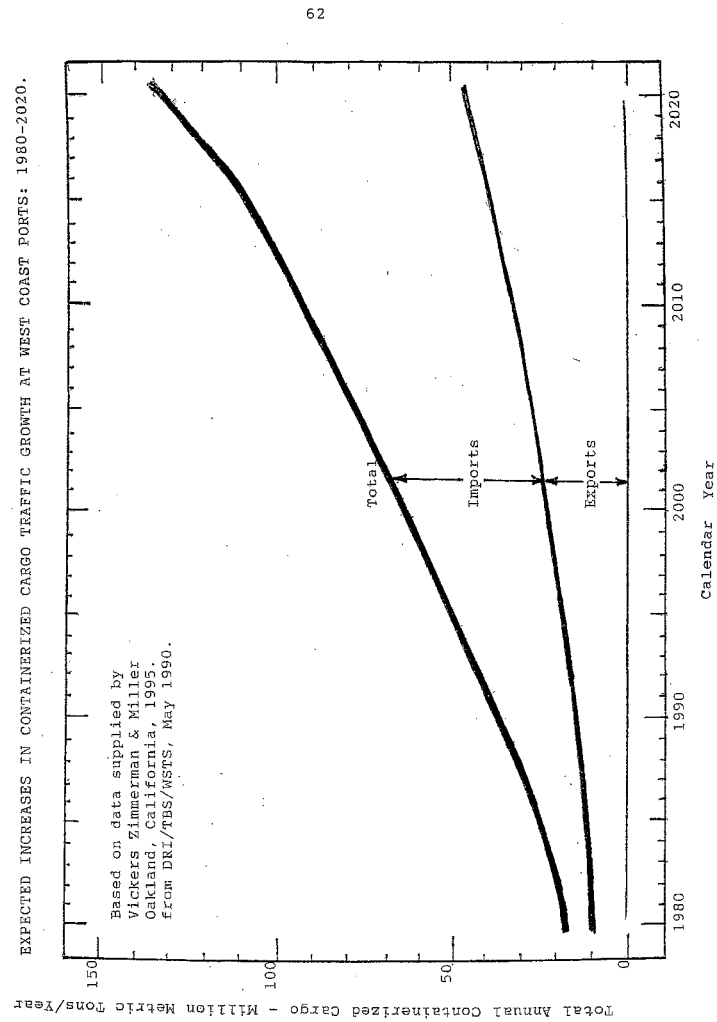
PORT TRAFFIC

## Comment Letter PH-F031B Continued





## Comment Letter PH-F031B Continued

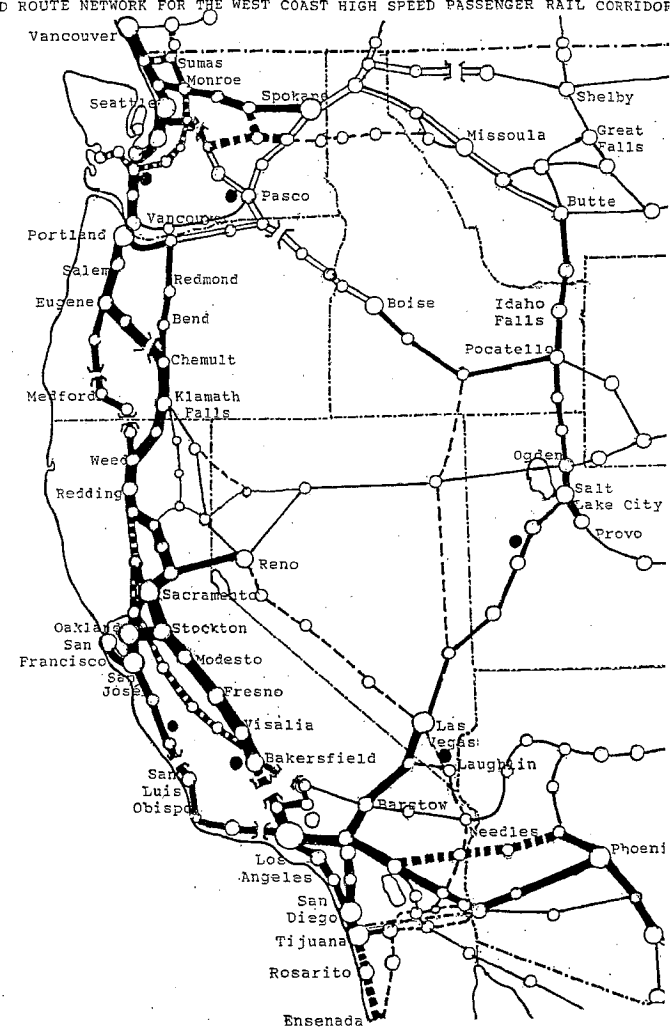


## Comment Letter PH-F031B Continued

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WEST COAST  
RAILROAD NETWORK

65  
PROPOSED ROUTE NETWORK FOR THE WEST COAST HIGH SPEED PASSENGER RAIL CORRIDOR



## Comment Letter PH-F031B Continued

